

THE SCOPE OF THE CONFERENCE: POSTCONFERENCE OBJECTIVES

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INTRODUCTION

Before the conference separates into committees it may be opportune to glance at the past of The American Division of the World Academy of Art and Science and to look forward to the post-Conference impacts that our activities will hopefully produce.

The current conference is in the tradition of the American Division and of the World Academy as a whole. When the late Hugo Boyko and his colleagues inaugurated the Academy in the years immediately following World War II they wanted to assist in clarifying and realizing the common interests of the World Community.

From the beginning the Academy has been *interdisciplinary* in deference to the contributions of knowledgeable persons who specialize in any branch of the physical, biological, and cultural arts and sciences. The Academy is *policy oriented* and examines the implications of knowledge for public policy.

In the early years the Academy established a record in Europe. Conferences were held in Rome, Paris, Brussels, Stockholm, and elsewhere, and symposium volumes were published on world population, resources, and other problem areas.

Toward the end of the sixties the American Division began to accelerate its program. In 1970 The International Joint Conference of The American Geographical Society and The American Division was held on the premises of the New York Academy of Sciences. This was the first Conference on Environment and Society in Transition: Scientific Developments, Social Consequences, Policy Implications.

A theme that ran through the deliberations of the Conference and received emphatic endorsement in its conclusions was the importance of maintaining *continuity* in the relations between the scientific and professional community on the one side and the public policy process. Much more is implied than the idea that close connections are made with government officials and agencies. The Conference recognized the importance of reaching beyond officialdom and establishing ties of mutual interest and confidence with individuals and associations throughout the body politic.

In the United States, for instance, relations are episodic. Interest is stimulated by public awareness of an "energy emergency" or by alarm among scientists and educators when their appropriations are under attack. If the concern of scientists with the public interest is to be credible the evidence of involvement must be continuous.

How is mutual trust to be achieved and sustained? What *distinctive* contributions can scientists and professionals make to their fellow citizens? A partial answer is that they can *offer periodic commentary on what has been done or left undone* by the institutions of public order. They can also *propose more adequate goals and strategies*. Periodic reviews and appraisals of public policy can perform a valuable function in the United States and in every body politic where private persons and associations are sufficiently free to report the truth as they see it without fear of retaliation. Reviews and appraisals are distinctive in several ways:

They are *voluntary* and at their best are independent of pressure from Big Government or Big Monopoly.

They draw on the *best available knowledge*. A basis is provided for judging present and prospective policy alternatives.

They *diminish intellectual fragmentation* by utilizing comprehensive maps of man and environment and by relating specific problems to the context where they occur.

After the 1970 Conference steps were taken to gain experience by initiating and executing *Public Policy toward Environment 1973: A Review and Appraisal* (*Annals of The New York Academy of Sciences*, Vol. 216, published May 18, 1973). Twenty panels of specialists prepared short chapters on their sectors of competence. Developments in the United States were put in the perspective of world trends.

The present Conference is intended to carry the Academy's strategy some steps further. As you have noticed, the procedure of this gathering differs radically from the model of a Conference whose principal feature is the reading of lengthy papers followed by brief discussion. Our model is a congregation of small working groups whose separate task is to prepare one or more documents designed to influence post-Conference activities, not only of the Academy, but of any number of official and unofficial groups and organizations.

Obviously such documents are not the only desirable outcomes of our week together. We do not overlook the importance of personal friendship and intellectual stimulation. These, too, will have post-Conference consequences favorable to a more adequate structure of World Order.

The documents will guide The Academy's activities at the post-Conference phase. In common with all problems, thinking about a world policy problem involves five intellectual tasks:

The clarification of *goals*;

The description of *trends*;

The analysis of factors that *condition* the direction and intensity of trends;

The *projection* of future developments; and

The invention, evaluation, and selection of policy *alternatives* designed to optimalize goal values.

The committees are involved with matters of method and substance. The expectation is that the committee on priorities will provide us with a document that clarifies the theory of world priorities. Some of the problems of

method that were discussed this morning may deserve more extended or independent treatment. The committees should feel free to prepare or to arrange for the preparation of special reports. Perhaps an example is the theory of specifying the quality or style of life, including the choice of social indicators. Other possibilities are the projection of futures, and the technique of conducting surveys of world priority estimates.

Committees are free to adopt any procedure that promises to expedite their work. They may decide to establish subcommittees of one, two, or more members. Perhaps they will take advantage of the presence of lawyers and other professionals in drafting reports for the plenums of the Conference and in the preparation of the final version of documents to guide post-Conference activities. Assistance may be obtained by private arrangement with members of the Conference who are not on a particular committee that desires their participation.

Most committees are expected to consider a large sector of substantive problems and to carry on the work begun at the First Conference. Our discussion has already demonstrated the importance of relating judgments of specific policy goals to explicit assumptions about the context in which these goals are expected to reach a stated level of attainment. If we are to deal realistically with objectives expressed in terms of *life quality* or *life style*, postulates must be made about the size of population. Does one assume zero growth or a specific level of acceleration or stabilization by 1994?

Further, if a given level of population is assumed, what *resource levels* and *technologies* are necessary to sustain the preferred quality of life and life style? For instance, how drastically must the capabilities of present technologies be changed?

If we postulate a preferred quality of life at a given level of population, resource use, and technology, what changes in *organization* and in *legal structure* will be required to manage and stabilize the transition?

Under the same set of assumptions what strategies will be effective in mobilizing the *public support* necessary to achieve and maintain the preferred public order?

Each committee is responsible for outlining the implications for their topic of adopting various goals and assumptions. It will be noticed that the list of committees does not cover the entire range of world policy questions. The intentions are to concentrate on sectors of special importance and to invite the committees to examine priority questions within the sectors. The interdisciplinary character of each group will speed up effective eventual communication among committees, regardless of their separate starting points. The committee on world energy, for example, will of necessity deal with levels of resources and technology. It will judge the probable impact of organizational and legal structures, and also of public perspectives and behaviors. A corresponding range of tissues will challenge the attention of the committees on food and population.

The committee whose take-off point is world structures of government and law will work closely with the substantive groups. The committee's

task is to design priorities for adapting the decision making and executing agencies of world public order to the several phases of decision:

- The formulation of *prescriptions*;
- The provisional *invocation* of prescription in concrete circumstances;
- The final *application* of prescriptions;
- The *termination* of prescriptions and the compensation of claims;
- The *appraisal* of policy structures and actions to date;
- The gathering, processing and supplying of *intelligence* to decision makers; and
- The *promotion* of public action.

The committee on world perspectives will be directly concerned with strategies for the mobilization of public support on behalf of appropriately timed action. This will necessarily involve analyzing the strength of parochial predispositions that either stand in the way of perceiving common interests or of identifying with the history and prospects of the world community.

Closely connected with these problems is the committee on knowledge, which covers research, instruction, and public information.

The committee on regions will explore the policy priorities by which regional changes can both express and strengthen fundamental transformations on a global scale.

On the basis of our experience thus far it is evident that documents are most valuable when they are brought to the focus of attention of active or potentially active participants in world public and civic order. The Academy will bring the documents that emerge from this conference to the attention of scientific academies, societies, universities, and other organizations that possess sufficient *autonomy (in fact) to sponsor or to initiate reviews and appraisals of public policy toward one or more sectors of the cultural, biological, or physical environment*. The overall aim is to *strengthen both public (official) and civic (private) order in furthering the common interests of man*.

A second post-Conference initiative is closely related to the first. The documents will provide guidance to those who are in a position to direct the focus of attention of the general public, as well as of official agencies. It is clear that perspectives are most immediately affected by what comes to the focus of attention. If the world community is to acquire a more coherent picture of the past, present, and future of man, and also to perceive the alternatives open for common action, coherent images must be made available at the focus of world attention. The proposed strategy is to approach potential sponsors with the *idea of initiating or adapting conceptions such as a social planetarium to the cultivation of world perspectives*.

AFFECTING WORLD POLICY: STRENGTHENING CIVIC INITIATIVE, REVIEW, AND APPRAISAL

We first consider the objective of affecting public policy by strengthening civic initiative, review, and appraisal, particularly by private scientific and professional associations. Experience demonstrates the danger of allowing the leviathan of power to swallow society, or, reversely, of permitting

private monopolists or anarchistic forces to paralyze public order. Menacing imbalances between government and society are not invariably associated with either socialistic or liberal-capitalistic structures. Socialist states can be democratic or oligarchic, and liberal commonwealths vary from democracy through monopolistic oligarchy to temporary anarchy. The Academy's purpose is to cultivate *continuing self-appraisal and correction throughout the world community*. A self-correcting process is most likely to succeed when it proceeds in two relatively independent parallel channels. The probability that a public order can stay "honest" is improved when the civic order is well-informed and active. Therefore, a major aim of the Academy is to encourage scientific and professional associations to contribute to the world decision process by performing the civic function of reviewing and appraising the adequacy of public order as it affects environment and society.

In an informed and comprehensive civic order, scientific and professional associations would regularly issue reports on public policy in specific sectors. These reviews would not be "one-shot" performances. On the contrary, they would become fixtures on the calendar of these associations. The reviews would develop attentive constituencies among government agencies, mass media of communication, political parties and pressure groups, and other private groups and individuals.

The World Academy plans to multiply Fellows who are interested in initiatives of the kind implied by the appraisal program. In every jurisdiction a *first step is to survey the current state of planning and appraisal, with special reference to the role of scientific and professional associations*.

A glance at the topical organization of the 1970 Conference (somewhat modified) provides an abbreviated map of the potential scope of appraisal. Our concern is with the impact of public policy on the physical, biological and cultural environment.

I. Earth and Space

- Space
- Air
- Climate and weather
- Water
- Seabed
- Earthquakes
- Fossil energy
- Nuclear and other energy
- Minerals and metals

II. Life

- Marine life
- Food plants
- Forests and timber processing
- Land animals
- Special regions (polar, deserts, marshes and estuaries, rain forests)

III. Man and Culture

Population
Human genetics
Family
Health
Education
Communication
Wealth
Arts
Sciences
Respect
Government, law, politics
Morals, religion
Ecology

Even a cursory examination of the world community shows how various are the institutions and the circumstances of the scientific and professional groups.

In some countries the scientific and professional societies are so tightly interwoven with the policy processes of governmental organizations that they are not sufficiently detached to sponsor reports of the kind we are discussing. Elsewhere the ties are less with official organizations than with private monopolistic structures. In any case the "free professions" are not, in fact, independent enough to engage in genuine acts of appraisal.

Sometimes the scientists and professionals are polarized into "establishment" and "antiestablishment" camps, so that no tradition has evolved of effective independence on the part of at least some specialists. In some nations current circumstances may be favorable to the emergence of a more independent civic order in which scientists and professionals play a dynamic role.

We are well-acquainted with some polities whose private and semiprivate academies and societies have a record of occasional participation in recommending or appraising public policy. They may be willing to recognize the opportunities and dangers of the time and to redouble their efforts in these directions.

In countries where the scientific and professional establishment is short handed and is heavily engaged in official nation-building activities, it may seem premature (even dangerous) for initiatives of the kind outlined here to be taken. Perhaps it is more useful to develop informal institutions designed to encourage unofficial and official discussion of basic aims and achievements. In one Southeast Asian country, for example, a university professor who is also a key official in the national planning agency sponsors a regular private gathering once a month that provides a unique forum of this kind. Eventually the institutional evolution of the country may justify more elaborate arrangements.

In recent times we have witnessed the rapid growth of official and private agencies that give prominence to one or another feature of the decision process. "Future" societies are a case in point. The "projection" of coming

developments is one of the five problem-solving tasks mentioned above (the others: goals, trends, conditions, alternatives). The Academy's initiative may very well induce some "future" organizations to broaden their scope to include more features of the policy process.

Another contemporary trend among instructional and research institutions is to reach beyond traditional limits by giving systematic encouragement to "policy analysis" or "the policy sciences." This is especially apparent in scientific and professional training. One manifestation of change is the widening scope of management programs in schools of public administration, public health, business, law, engineering, agriculture, architecture and planning, education (and so on). No doubt the Academy's initiative will stimulate and help to justify these programs.

Concern with public policy is also evidenced by new centers intended to assist the formation of professionally competent persons in "policy analysis" or "policy sciences." The emerging field goes beyond training in particular managerial skills to include critical examination of the factors in the context of policy that affect success or failure.

These developments once more raise the question when a skill group justifiably achieves recognition as a profession. The capacity to *serve clients* is not the sole test, whether we look at the old professions, such as medicine and law, or think of more recent candidates. It is necessary to add *capability in evaluating an aggregate process and in the clarification of common interests*. Physicians are expected to concern themselves with community as well as individual health, and lawyers are expected to consider the community level of justice in addition to the interests of particular clients. This criterion applies to all knowledgeable groups in the several realms of the physical, biological, and cultural environment.

It is helpful to provide initial guidelines for reviewers and appraisers of public policy. Appraisals differ in several ways from a standard summary of a precisely defined field. Reviews often deal with sectors of the environment toward which public policies are incompletely formulated. Goals and principles may be somewhat obscure, contradictory or confused; legal prescriptions and procedures may be missing or inept; organizational structures may be in flux; technologies may be underdeveloped, obsolescent, or in debate; public support may be ineffectively mobilized. Inclusive and satisfactorily tested information may be unavailable.

In a word, while a great deal of information is at hand, the links between knowledge and action are somewhat tenuous. The margin of uncertainty is wider than a scientist is accustomed to, and in such circumstances he may feel uncomfortable about using his judgment. Nevertheless, it is because a *disciplined* judgment can assist in the formation of working programs and in estimating success or failure, that the knowledgeable citizen is under a moral obligation to contribute what he can—based on his special knowledge—to coping with the common problems of the community.

Policy planning or appraisal faces an individual or a committee with complex intellectual tasks. The following questions have been used to initiate the work of some panels. Suggested improvements are invited.

a. *Goals* of public policy. What are the objectives of public policy toward that portion of the environment with which the Panel is concerned? When were these goals formulated? What form was used (i.e., were they part of treatises, statutes, ordinances, administrative regulations, etc.)?

b. *Criteria* of public policy. What criteria are relevant to the problem of reviewing the adequacy of policy formulation and performance? What criteria have already been recognized by public authorities as pertinent? For instance, consider the clarity and comprehensiveness of public policy. How clearly are objectives specified in reference to use, conservation, waste, pollution, and the distribution of burden and benefit? Are the lines of responsible authority precise or vague?

c. *Positive and negative achievement*. Have the technologies applied or encouraged been the most adequate? Have organizational structures acted in full cognizance of their responsibilities and have they been provided with the legal authority and the monetary and other assets required to operate effectively? Have the relevant authorities actively mobilized the public and group interests necessary to initiate and support what needs doing?

d. *Optimum proposals*. Each Panel is encouraged to indicate and assess possible alternatives in technological, organizational, legal, and support-mobilizing terms. Attention is directed to the assigning of priorities to component objectives and strategies.

Whatever the jurisdiction with which a Review Panel is chiefly concerned, the Panel is reminded to take account of policy formation in the largest international arena. Reviews and appraisals are needed at every level—national, transnational, and subnational. The latter includes provinces, districts, and metropolitan and rural contexts. Scientific and professional societies are ultimately involved in all. Parallel appraisals can be developed until they provide increasingly satisfactory samples of world trends and conditions and of the impacts attributable to policies that were either initiated by the scientific community or by others.

Since reports are directed to a larger and more diversified audience than a purely technical group, it is advisable to keep the reports short and, when feasible, to intensify their effect by employing multimedia technique. These requirements do not rule out technical appendices or impede the cooperative development of systems of data gathering, processing, storing, and retrieval. Through coming years they can be expected to become more complete, precise, and dependable.

As scientific and professional societies gain experience and expertness they will be able to carry their preparatory work to whatever level of minuteness seems rewarding. A critical issue is whether the data at the disposal of associations in the civic order will be substantially identical with what is available to the government. In view of security and privacy considerations, it is agreed that some limits are properly imposed on the access of private individuals and organizations to government information and on the access of officials and official agencies to civic organizations and individuals.

A further point concerns collaborators. Previous references may seem to imply that specialists should work solely with fellow professionals, officials,

and leaders. In countries where popular institutions are well-rooted, it is important to maintain the strength of the total system of public and civic order by involving professionals with their neighbors in community action.

MOBILIZING WORLD ATTENTION: THE SOCIAL PLANETARIUM AND OTHER TECHNIQUES

We mentioned a second strategy of Academy action in the post-Conference period. It is intended to reach those who have access to the focus of attention of large audiences in the world community.

The spectacular expansion of all media of communication has accelerated the tempo and direction of world history. To assert that history has accelerated is to imply that what would have happened later has happened sooner and that changes in timing influence substantive developments. *World attention zones* have outrun other zones, notably those of travel, trade, and technology, and also of opinion, sentiment, and organization.

The communications revolution was expected to contribute to the rapid consolidation of world public order. Growth has been much less rapid than predicted. Fragmentation has counterbalanced unification. National and anticolonial identities have multiplied. The universal aspirations of the Marxist world have been moderated by proliferating national socialisms. Racism cuts across a potential identification with man. Even the media of mass communication are absorbed by parochial news and commentary.

From its inception the Academy has emphasized the importance of disseminating a sufficiently common map of society and environment to foster the continuing discovery of common interests, the innovation of institutions designed to realize these interests, and the cultivation of self-correcting policies of change.

We affirm that it is possible for scientific and professional organizations to strengthen the forces that work against fragmentation on behalf of coherent presentations at the focus of attention.

Specialists on communication are hopeful, if not confident, that comparatively new methods can be used to correct the fragmented impact of the mass media without turning to global dictatorship.

Among corrective devices is the planetarium technique. In the last century the planetarium was introduced as a means of popular education in astronomy. It provides a self-orienting experience, an exposure by means of which the individual ego can be brought to perceive himself in the context of the whole. The presentations display the past of the Heavens and the Earth and preview the future, including in recent years such policy goals and alternatives as the arrangement of artificial satellites and the control of pollution.

The *social planetarium* does not require a machine. It calls for a technique that creates a coherent experience of society that is equivalent to the experience of nature.

The Academy's proposal will be directed to colleagues in academies and professional associations. The suggestion is that each organization take the initiatives necessary to apply the social planetarium procedure at all terri-

torial levels and among all pluralistic groups. Whether the technique is adapted to an ephemeral broadcast or a permanent exhibition the purpose remains the same: *to provide a comprehensive, realistic, vivid, and policy-oriented image of the whole.*

Selectivity is the key. The challenge is to sustain a contextual sense despite the avalanche of detail involved in an inclusive panorama of man's past, present, and future. Each committee of this Conference is invited to offer provisional guidelines to those who will assume eventual responsibility for outlining in detail the presentations appropriate to each geographical setting, historical period, social sector, and problem complex. Some initial questions:

Goals. What conceptions of life quality and style can be presented in ways that will be meaningful to world audiences who are in situations that range from global broadcasts to relatively permanent local exhibits? Such documents as the Universal Declaration of Human Rights can be given tentative, not dogmatic interpretations. They relate to every value-institution sector of human life (to the shaping and sharing of power, enlightenment, wealth, well-being, skill, affection, respect, rectitude).

Trends. What are the most available indicators of the key changes that have occurred in the globe as a whole and its various regions? We are concerned with government, law, and politics; the communications revolutions; the technologies of producing and distributing wealth; the transformations in safety, health and comfort; the variety of professional, occupational, and artistic skills and expressions; the range of institutions for the guidance of love and loyalty, and other manifestations of affection; the arrangements for recognition (respect), including social class and caste; the norms and levels of responsible conduct (rectitude).

Conditions. Many explanations are offered to account for the changing directions and intensities of world trends. Given the presence of scientific and political differences in the world community the problem is to aid communication and inquiry by presenting the most important versions.

Projections. What future time periods are the most relevant? (Note the symbolism of A.D. 2000 and of 20-year generation rhythms.) What range of "catastrophic" or more sanguine scenarios should be chosen? What are the recommended sectors and indicators?

Alternatives. In the light of assumptions about priorities what policy problems should be proposed for universal presentation? How can the categories employed at the Conference be adapted to the purpose (e.g., assumptions about quality and style of life, population, resources and technology, organizational and legal structures, mobilization of support)?

It is to be taken for granted that parochial constraints will modify social planetarium content in many situations. Nevertheless it is probable that enough convergence of view has already occurred to warrant the claim that much can be done to achieve a widened and deepened map of common interests and identities in the world community.

The social planetarium program can be launched on a modest scale by academies, professional societies, universities, or other knowledgeable

bodies. Under the guidance of local panels (who, among other sources, evaluate suggestions and materials from elsewhere) exhibits can present a concise version of the whole.

The social planetarium conception can also be applied on a huge and highly differentiated scale, realigning available museums, galleries, libraries, archives, gardens, and parks. By giving prominence to current trends, future projections, and action priorities we can add a dynamic dimension to "the culture of exhibition." It will be feasible to take more effective advantage of occasional fairs and exhibits and to make sure that they are planned in ways that permanently enrich the community.

It is important to recognize that the social planetarium technique can be applied at inter-village levels, as well as at great national, metropolitan, and regional centers. World cities are in possession of sophisticated resources. But the planetarium conception challenges everyone in every locality to guide his future behavior with an enlightened and updated image of the whole.

The original planetarium was an achievement of scientists, engineers, and educators. It will continue to attract and challenge the most knowledgeable components of human society. In addition, everyone can, in principle, be enlisted to participate in planning the future. ("Hawaii 2000" is a precursor of the involvement of young and old, rich and poor, professional and amateur.)

A world of knowledge does not need to be a world of passivity. It can be a world of cooperation in expanding, interpreting, and acting on the basis of knowledge and judgment.

OTHER ACADEMY PROGRAMS

The two post-Conference programs do not exhaust Academy activities. We have emphasized Appraisals and the Social Planetarium because they seem particularly timely.

It is appropriate to comment upon our relationship to the *World University* movement. For many years the World Academy (WAAS) has been involved in plans for a World University and has engaged in exploratory initiatives to this end. We encouraged the United Nations to act affirmatively and communicated many specific suggestions to UNITAR and other responsible agencies. On various occasions WAAS prepared publications in which the objectives and operations of world universities were examined in some detail. For example, memoranda and booklets were distributed at the Stockholm Conference of the Nobel Foundation on "Values and Facts in the Modern World." There are grounds for believing that those activities had some influence on the evolution of the plans recently announced by UNESCO and others.

The Academy has always conceived of the world university *movement* as too comprehensive to be confined to a single structure. It welcomes initiatives under official, semi-official, or private auspices and looks forward to cooperative projects and arrangements among them.

Another feature of the Academy's approach to the creation of world

university structures has been the encouragement of *multiple-centers* with *distinctive though interconnected functions*. The *primary units* in a chain of centers may be university departments, schools or institutes, or government bureaus or private institutes. The essential requisites are high scientific and professional quality conjoined with concern for the policy implications of knowledge. The Academy has taken initiatives for an expanded and selective program.

Closely related to university centers are the plans for World Academy *Fellows* who want to focus on policy questions and would benefit by intensive exposure to the relevant specialists. The Fellows would sometimes become involved in *travelling seminars* that stimulate critical discussion among diversified groups and institutions.

For questions of particular importance the Academy has the mechanism of a selected *World Commission* at its disposal. Of course the Academy will continue to adapt the *Conference* to its purposes.

MAN'S PARADOXICAL PREDICAMENT

The preceding pages have dealt in such detail with "ways and means" that it may seem that we have lost interest in examining our conception of man's predicament. Without pretending to speak for the Academy as a whole, it may be worthwhile to characterize some of the principal features of the global situation as these features have been analyzed in many previous discussions.

The predicament is obvious. If we have made fantastic progress in knowing and managing nature we have made remarkably less progress in knowing and managing culture. Thousands of qualified scientists have been telling their fellow men about the perilous significance of nuclear energy and biological knowledge if knowledge is turned to destructive purposes. Nonetheless, the peoples of the Earth continue to live in a divided and militant world in which the institutions of public order are too weak to arouse and sustain confidence in peaceful and beneficent change. The underlying expectation of violence and the institution of war continue to permeate the world community.

We ask again: How can these things be? How does it happen that man continues to live in the paradoxical predicament of potential abundance and threatened disaster?

Consider the institution of war in relation to other institutions in the world community as a mutually sustaining system. If the war system were not supported by socioeconomic systems, and if socioeconomic systems were not supported by the war system, the institution of war would long since have withered away.

The analysis emphasizes the situation-by-situation structure of the institution of war. It affirms that the individual actors in these situations expect to be better off, in terms of all their value preferences, by performing the usual operations than they would be by acting otherwise. The continuation of the war pattern, in common with the perpetuation of any mode of behavior, is a function of the net advantages expected to be obtained in specific circumstances. It does not necessarily signify a favorable overall dis-

position toward the institution itself. Nor does it presuppose awareness of the connection between many specific situations and the overall network of war-sustaining institutions. It may be that work in a particular laboratory is not perceived by the staff as intimately involved with weapons.

The analysis provides a guide to the explanation of two phenomena which bear directly on our topic: the failure to abolish war (a) by establishing a universal system of public order by conquest, or (b) by introducing at least a minimum system of effective public order by consent.

If we think of world developments in terms of innovation, diffusion, and restriction, the inference is that innovations designed either to conquer or to bring about peace by consent have hitherto been blocked by the restrictive forces. We recall the two German initiatives (of 1914 and 1939); or the earlier initiative of France (1789). We think, too, of the initiatives at the end of World War I and World War II on behalf of the League of Nations and the United Nations. Both types of innovation have failed on a sufficiently grand scale to transform the fundamental perspectives and operating techniques of world public order.

Elites Trapped in the Political Process

As far as we know, the top figures in China, the Soviet Union, the United States, France, West Germany, Italy, and Japan are disciplined, experienced, realistic men. They may be "peculiar," but they are not sick in the clinical sense of Stalin in his later years. I have no doubt that no matter how meager or extensive their training may have been in science or technology, these leaders are convinced of the catastrophic potential of nuclear weapons in an anarchic world system. I suggest that even if they wanted to agree with their opposite numbers to establish a new system of effective public order, they would hold back from taking crucial steps for fear of opposition in the arena of internal politics. After all, a power relation is a two-way affair. To "have" power is to be empowered. Any rumor that the top leaders are planning to put the country in a position where it can be subordinated to a coalition of foreign powers on questions of "security" or "basic policy" continues to stir personal, factional, party, and governmental branches to resist. Is it any wonder that a statesman may decide that political suicide contributes neither to his career nor to the fundamental reconstruction to which he may be personally devoted?

The political elites of the globe are trapped by the internal and external process of power balancing which is fundamental politics.

Scientists and Professionals Trapped by Proximity Preference

Many eminent figures in science, as in scholarship and the arts, have echoed the many ethical and religious leaders who have identified with mankind and urged everyone to recognize the common interests of all. We think of Einstein, Kant, and galaxies of outstanding persons. None the less it continues to be possible to ask: Why are all scientists and professionals not part of a single corporate body that works for man?

Many factors work against universality. A principle appears to be that *universality of claim and use is frustrated by the parochial locus of innovation.*

Many philosophical, jurisprudential, and theological doctrines invoke universal symbols of justification. The point of initiation of a doctrine is, of course, circumscribed in time and place. In consequence the acceptance of one universal claim may be restricted by invoking another universal. (For instance, a scientific generalization is not necessarily without resistance from the scientific community, nor is the spread of a technological device a foregone conclusion.)

So long as specialized scientists and scholars depend for economic support, respect, and other value indulgences on national states, it can be predicted that career expediencies, at least, will put the fruits of knowledge at the disposal of national societies and hence of national states. Those scientists who cross the boundaries of one power or power coalition with which they are identified will continue to be tacitly isolated by the middle range and the rank and file, who are overwhelmingly dependent on the net value indulgences afforded them by national settings. Note further that for scientists who decide to play political roles national popularity and success will presumably be at the cost of some international interests or affiliations. The inference is that although the world politics of our epoch can be plausibly characterized as marking the emergence of "the permanent revolution of the modernizing intellectual"—including natural and social scientists—the proximate advantages perceived by competing intellectuals maintain the aggregate structure of world division.

World Identity and the Self-Reference Mechanism

The attentive observer continues to be impressed by the revolutions that have transferred the technology of communication. The revolutions have diminished the intensity of devotion to *local* identities. The beneficiaries have usually been the *more inclusive* images of national identity. These images have, however, stopped *short of universality*. Communication has not, as yet, generated a deep sense of identity with mankind and with institutions that explore and express common interests.

To some extent this is to be attributed to a pattern of response that is not at first premeditated but which is quickly exploited in a divided world. The "self-reference mechanism" is the most economical means by which an individual familiarizes himself with a new environment and enlarges the scope of his own identity. Witness how visitors to a new town or country incessantly compare it with their home town or native land. The role of the self-reference effect is heightened in the world arena by the deliberate strategies of official and unofficial controllers of education and mass media. Huge states that are well advanced in voluntary modernization (e.g., Great Britain, France, Western Germany and the United States), although cultivating many foreign contacts, are largely self-absorbed; internal news references multiply more rapidly than references to foreign nations, and especially to foreign perspectives. Giant states that engage in forced modernization (e.g., the Soviet Union and Red China) are especially nationalistic, anti-local, and anti-international.

The significance of the self-reference effect and the monopoly of attention

paid to national events is underlined if we think of the negative responses that appear when proposals are made for the purpose of weakening its impact. For instance: give a *world communications commission* access to all citizens of the globe for at least an hour a day of news and comment (and make small receiving sets available to all); put in the hands of a *world board of education* at least a day of school time during elementary common and secondary years; arrange for each child to spend at least *a year abroad* (preferably in the territory of a political rival) before adolescence; provide each young person between adolescence and young adulthood at least *another year abroad*; break up the national power monopolies by *dividing the giant powers* into small powers and consolidating an international organization strong enough to maintain at least minimum public order and to allow the movement of persons and goods.

Parochial Ideology: Partial Rejection and Partial Incorporation

Clues to the preservation of the divided and militant structure of world affairs are provided by mechanisms that may also rise to the level of strategies. One is *partial incorporation* of an ideological innovation. The other is *partial rejection* of a new pattern. The symbol-system in the name of which power was seized in revolutionary France included "life, liberty and the pursuit of happiness." These themes were rejected in whole or in part by ruling elites in and outside of Europe. Concurrently some elites were able to maintain or to win new support at home by incorporating some of these doctrines into an established ideology.

A parallel process was exemplified in the response of outside elites to the challenge of the new symbol structure in the name of which the Russian Revolution of 1917 was conducted. Partial incorporation is sometimes a deliberate strategy, as in the case of the Nazis in Germany who were a self-proclaimed party of "workers" and "socialists." By emphasizing the "national" identity opposition was mobilized against acknowledging the primacy of the Russian Center of self-styled "world revolution." The "racist" theme was a political innovation that helped to differentiate the Nazis from the Marxists. Similarly the Marxist emphasis on "economic" categories played a role in functionally differentiating Marxist movements from the "moralism" and "legalism" of French-influenced political ideologies.

Up to the present the various world revolutionary movements have fallen short of universality as a partial consequence of the mechanisms that fostered rejection of the political demands of the innovating center, while facilitating the spread of support-mobilizing features of the new ideology.

Symbol manipulation serves as a means of testing the direction and intensity of the predispositions current in the world community as a whole or in any component part. In a divided and militant world arena polarization is a consequence. Universalizing and parochializing tendencies are in fluctuating balance and imbalance, whether one is examining the territorial or the pluralistic deployment of individual and collective actors.

Ruling elites are trapped in a divided world arena in part as a consequence of the factors that play into the hands of internal opponents who are able to

utilize the predispositions available as expressions of the self-reference effect and of the mechanisms of partial incorporation and rejection. The mechanisms referred to are not limited to the ideological features of a particular pattern. Every other element may become a target of partial incorporation or rejection. The operational practices of "Bolshevism" went much further than words and attitudes; and they, too, were selectively responded to by the political environment.

These symbolic processes interpose barriers to the completion of an inclusive world public order by consent. The tendencies toward universalizing the practice of participation in the shaping and sharing of values are being held in check.

Although great centers and subcenters have arisen outside Western Europe, the control of modern values and institutions is geographically unbalanced and promises to remain so, owing in part to the cumulative advantage of established centers. We note, too, that the established elites of a traditional society tend to retard the tempo of innovation and diffusion by *minimum self-modification*. Hence the strategy of restriction by partial incorporation plays a conspicuous role in perpetuating the imbalances and the diversities that aid in maintaining a divided and militant world.

SIMULTANEITY AND NON-SIMULTANEITY: FUTURE PROSPECTS

Implicit in the foregoing analysis is the significance of non-simultaneity in retarding the spread of innovations that comprise or expedite world public order. Often originating at a single nuclear center, there is time for all who are identified with established values and institutions to isolate the domain of the new center by combining against it and to weaken its distinctive assets by partial incorporation of its most value-enhancing features. The growth of innovative subcenters outside Western Europe has failed to bring about diffusion and unity, partly because competing patterns are "synchronous" rivals.

It is possible to imagine contingencies in which unity could be achieved by a process predominantly of consent rather than conquest.

For example, conceive of simultaneous access to power in many nation states by publicly supported political movements committed to a universal public order, whose leaders would immediately establish or invite an inclusive organization to take over the command of armed forces and to preserve the peace, and to exercise the taxation and fiscal authority necessary to support key common activities.

Such simultaneous action could conceivably follow rejection of the war system by the aroused youth (and other groups) and their concurrent withdrawal of support from independent, separatist, nation-centered institutions. Sudden collective seizures have occurred on a large scale in the past, such as the Crusades. In the contemporary world, with its vast networks of instantaneous communication, quick travel, and rapid transport, it is possible that the anxieties generated by the arms race, coupled with a gradually widened self-reference function, may lead to simultaneous rejection of the institutions of war and division, and the prompt diffusion of an authorita-

tive and controlling system of optimum public order. Such a development would provide the support necessary to permit power elites to expect more advantages from arresting rather than continuing the war system.

We do not forget that a unified system of world public order is not necessarily a participatory public order. Two contrasting scenarios indicate why it is important to provide for continuing appraisal and planning of changes in the world community context:

I. The Oligarchic Model. The power centers of the world arena adhere to development policies at home and abroad that depend on high levels of investment in resource-luxuriant technologies, in this way heightening commitments to wealth and power. In a world that emphasizes the values of material wealth and power, the "revolution of rising frustrations" continues to generate pressure, "from below," and from "out there" for the wider sharing of wealth and power. Provoked by parallel challenges "from below" the oligarchic elites (governmental, industrial, political) come to expect that it is cheaper and less hazardous to evolve toward a unified transnational oligarchy (Washington, Moscow, Peking, Tokyo, for example). In striving to consolidate an oligarchic world public order the instruments of communication are used to indoctrinate and distract. Chemical and biological and other coercive means are employed to test or correct failures of indoctrination.

II. The Participatory Model. The demand for selective development increases the pressure for investment in intermediate, resource-parsimonious technology that minimally disrupts the distribution of population and intensifies demand for the pluralization of values. Excessive concern with that culminates in expressive acts that are parsimonious in material requirements. Levels of frustration are held in check; oligarchies are deprived of support; the decision process is responsive to persuasive alignments of skill and other pluralistic groups; mass media provide attention opportunities that generate and re-edit common maps of man's past, present, and future and strengthen a universal and differentiated sense of identity and common interest.

It is not necessary at present to predict whether the oligarchic or the participatory model will most closely harmonize with future events. The main function of such a model of the future is less to foretell events than to forestall or to expedite their occurrence.

The "developmental construct" of the past and future has underlined the importance of communication in providing the most rapid and comprehensive means of guiding collective action by providing relevant and vivid messages at the focus of attention of all who participate in the public and civic order of the World Community. The Academy is an institution primarily in the civic order that already possesses a partial network of communication with other individual and organized actors in the world community of knowledge. The question is how can we utilize these connections most effectively to strengthen civic order and especially to mobilize coherent conceptions of common interest and identity throughout the world community.